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ABSTRACT

A study was undertaken to consider existing, as well as hitherto untried methods, to measure competencies of student teachers in the special education fields and to assess the effectiveness of teacher training programs. The survey, conducted at a university in the Southeast, compared the self-evaluations of 32 undergraduate special education student teachers with evaluations by their cooperating teachers. Both groups were provided with a rating scale of listed competencies designed to measure their perceptions of skills and needs. Tabulation of the ratings should provide the basis for improved evaluation tools, and a review of the answers relating to areas of program strengths and weaknesses should aid teacher training institutions in their future planning. Additional research is recommended. (Author/JD)

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# Competency Evaluations of Prospective Special Education Teachers

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Running head: COMPETENCY EVALUATIONS

Abstract

A study was undertaken to consider existing, as well as hitherto untried methods, to measure competencies of student teachers in the special education fields and to assess the effectiveness of teacher training programs. The survey, conducted at a university in the Southeast, compared the evaluations of 32 undergraduate special education student teachers with those of their cooperating teachers. Both groups were provided with a rating scale of listed competencies designed to measure their perceptions of skills and needs. Tabulation of the ratings should provide the basis for improved evaluation tools, and a review of the answers relating to areas of program strengths and weaknesses should aid teacher training institutions in their future planning. Additional research is recommended.

Program evaluation may be defined as the use of systematic procedures for gaining relevant information (data) about programs and their effects so as to illuminate program decisions (Attkisson, Hargreaves, Horowitz, & Sorensen, 1978; Pophem, 1975; Rossi, Freeman, & Wright, 1979). In section 618 of P.L. 94-142, evaluation requirements are delineated for programs serving handicapped children under that act (Dunst, 1979); by implication, programs designed to train special education teaching personnel would seem to warrant similar evaluation (NCATE, 1982). Unfortunately, evaluation of teacher training programs and in particular, of special education training, if undertaken at all, remains at a low level of research product.

Over the last few years, however, both professional groups and state educational agencies have made a substantial effort to develop instructional competencies in the process of teacher evaluation. While work to define these specific competencies and their components must remain imperfect, there is agreement that a core body of knowledge and skills necessary for teachers individualizing instruction exists (Blackhurst & Hofmeister, 1980; Council for Exceptional Children, 1978; Heller, 1983; Heller & Ridenhour, 1983; McNutt & Mandelbaum, 1980; Reynolds, 1980). It is still necessary, however, for teacher training programs to struggle with the measurement and documentation of such competencies (Maple, 1983; Shores, 1973).

Many issues surrounding the measurement and evaluation of competencies in teacher training programs remain to be addressed. For example, Grotelueschen and Lahti (1978) discuss such problems as identifying the components that compose a particular competency, substantively translating quantity of skills into teacher quality, and deciding what percentage of trainees must demonstrate proficiency in order to consider the program or one of its modular aspects beneficial. Training programs necessarily involve a complex package of interventions and contextual factors, and yet without an available comparison group, evaluations appear limited to simplistic research methods. Despite such difficulties, the position is endorsed that, however imperfect, such evaluation efforts are valuable (Groteluschen & Lahti, 1978; Heller, 1983; Heller & Ridenhour, 1983).

A preliminary evaluation focus of teacher preparation programs remains on prospective teachers who cumulate training by student teaching. It is during this activity that the prospective teacher is to summarize all learned knowledge and prior experiences into creating his/her individual teaching style and essentially, "the student" becomes "the teacher." As such, it becomes evident that evaluating competencies demonstrated by student teachers is a means of looking back to assess the depth and quality of the training preparation.

There has been, however, a long standing controversy as to the most appropriate methods used to evaluate teaching competencies (Bolton, 1973; Gage, 1973; McNeil & Popham, 1973). A common practice is the rating (Popham, 1975) that is typically prepared by supervisors and/or the individual teachers themselves. Though popular, ratings, unfortunately, have several disadvantages (Popham, 1975). Predominant among these is the fact that many rating items require a high degree of inference and/or ambiguity on the part of the rater. Also, when Likert-like scales are engaged, the lower category choices are infrequently used, creating a generosity error. Nevertheless, ratings remain a frequent practice and provide a valuable means of evaluating teacher effectiveness' (Popham, 1975).

Very few studies exist on competency evaluations. The present research was a pilot study that sought to serve as a preliminary step in conducting an evaluation of one aspect of a teacher training program. The following specific research questions were addressed:

1. How do students' competency self-ratings compare with teachers' ratings?

    a. How do student teachers rate themselves on the Mental Handicaps' Competencies? What are their basic areas of perceived high and low competency?

b. How do cooperating teachers rate the students and what areas do they perceive as high and low competencies?

2. Are there any significant differences in overall competency ratings between students and teachers?

3. What relationships can be demonstrated by the competency ratings?

a. Is there a relationship and/or agreement between student and teacher competency ratings?

b. Do the cooperating teachers' overall competency ratings relate to student GPA?

4. Where in the training program did the student teachers perceive each of the competencies to be addressed/learned? Which course(s) and/or experiences in the teacher training program were most relevant to the development of the competencies?

5. What is the overall level of student and teacher satisfaction with the training program?

6. What are the general strengths and weaknesses of the specific preservice program being investigated?

## Design of the Study

### The program

The evaluation was conducted on a preservice undergraduate special education training program at a university in the Southeast. This program graduates approximately 60 students per year with beginning teaching certificates in mental retardation.

Prior to student teaching, students complete both general college and professional education requirements and take a minimum of 16-semester hours of specific special education courses. The special education department in this university has a total of eight faculty members.

## Subjects

Subjects for this study included both student teachers and assigned cooperating teachers. All senior special education majors enrolled in student teaching in the spring semester (n = 32) were included. Each cooperating teacher assigned to these students also was utilized. It is assumed that these cooperating teachers have expertise in special education, each being certified and experienced in the field.

## Procedure

A rating scale was developed incorporating a state defined list of competencies for special educators of mentally handicapped students. A Likert-like scale, utilizing five points, was provided for judging perceived degree of competency for each item, with the numeral "one" representing little or no competency and a "five" indicating a great deal of competency. Student teachers were directed to indicate their own perceived level of competency for each objective listed. Also, they were asked to indicate for each competency the course(s), experiences, and/or assignments that helped to develop that particular item. Cooperating teachers were

given the same rating scale and were asked to indicate their perceptions as to the degree of competency their assigned student teacher demonstrated on each item. These evaluations were conducted independently. Specific directions and examples were provided for all subjects, including a cover letter explaining the nature of the study and addressing possible concerns regarding grades and/or confidentiality.

## Reliability

Since the survey instrument employed consisted of rating a specific state department's competencies and had not been established as a reliable evaluative tool, it was necessary and appropriate to examine the reliability of these data. A small sample (n = 9) of student teachers unexpectedly were asked to complete the same survey approximately two to three weeks after their initial responses were collected. As explained below, the data were collapsed and presented in terms of 20 overall variables as well as individual items. For the variable scores, over all subjects, the total correlation was .55, theoretically meaning that 55% of the variance in the observed scores was due to true score variability. The overall reliability score for items was .45. In terms of individual subject coefficients, five out of nine correlations for variables and eight out of nine correlations for items were significant. Given the modest range obtained (mostly, responses were 2-4) for the data on which these correlations were

based, these results would seem to indicate an acceptable if moderate level of stability.

## Analysis and Results

### Completion rate and treatment of missing data

The competency questionnaire was given to 32 students and their cooperating teachers for a total of 64 subjects. The completion rate was high; specifically, 90.6% (n = 29) of the students and 93.8% (n = 30) of the teachers returned the rating scales. Among these, there were 27 matched pairs.

Unfortunately, within the returned questionnaires, particularly among the teachers, there were varying amounts of missing data. In the analyses below, a conservative approach was taken, in that incomplete or unmatched items were removed from the specific statistical analyses performed. This necessarily decreased sample size. Missing data affected the present study, in that where there was a high rate of missing data, it limited the strength of conclusions that could be drawn. Again, this problem was limited largely to the cooperating teachers.

### Data analysis

The rating scale contained a list of 79 competencies developed and hierarchically arranged by a state department of public instruction. It seemed appropriate to group them conceptually into a smaller number of global variables, while still adhering closely to the state department's given numerical groupings. Responses to

items pertaining to a given area were averaged together to produce a variable score; for example, the remedial reading variable combined three items concerning the teaching of remedial reading. Twenty composite variables were so produced. Both composite variables as well as the individual competency items will be discussed.

In presenting the results, the data and analyses germane to answering each will be listed by question:

1. How do students' competency self-ratings compare with teachers' ratings?

    a. How do student teachers rate themselves on the Mental Handicaps' Competencies? What are their basic areas of perceived high and low competency?

The students' mean responses for the composite variables indicate that the students rated themselves as above average in the various competencies. Only three of the variables had means less than 3.5 (i.e., spelling and writing 3.45; math 3.42; and research literature 3.39). The following eight variables were above 4.0: characteristics, prevalence, curriculum, continuum of services, instructional planning, legislation, attitudes/ historical, and classification. These ratings suggest a relatively high perceived-degree of competency in these areas.

More specific data by individual competency items state the student means for 58 of the 79 items were 3.5 or better, indicating

a perception of overall adequacy in training. For example, the following five competencies received the highest ratings: (a) demonstrate the ability to plan for instruction (4.64), (b) identify characteristics at the various levels of retardation (4.45), (c) identify definitions/classification systems (4.31), (d) demonstrate the ability to implement instructional strategies (4.27), and (e) discuss the present and historical definitions and classification systems (4.24). Perhaps more interestingly for program planning, the lowest rated items included: (a) describe biomedical factors (3.08), (b) discuss conceptual and theoretical approaches to spelling instruction (3.04), (c) discuss conceptual and theoretical approaches to math instruction (2.69), and (d) describe non-traditional ways of teaching algorithms (2.64).

There was, however, some degree of individual variability in the ratings. Sixty-nine percent of the students' overall average (mean rating) was above 3.5, while the remaining 31% fell between 3.1 and 3.5. To summarize, one might contrast high vs. low rated areas. The following variables were perceived as strengths: characteristics (90% above 3.5), attitudes-historical (86% above 3.5), curriculum (86% above 3.5), and instructional planning (82% above 3.5). Conversely, students perceived the following variables as weaknesses: research literature (55% were at 3 or below), spelling and writing (38% were at 3 or below), vocational skills (35% were at 3 or below), math (29% were at 3 or below), and

professional organizations (24% were at 3 or below). Lastly, for 17 of the 79 items, 80% of the students rated themselves as above average (4s and 5s). On the other hand, only eight of the 79 competencies received a rating of 1 or 2 by 25% of the students.

1. How do students' competency self-ratings compare with teachers' ratings? How do cooperating teachers rate the students and in what areas do they perceive the students as having high and/or low competency?

Mean data on cooperating teachers' responses generally revealed the teacher ratings as being highly positive. All variables had means above 3.5 except for two, legislation (3.47) and research literature (3.38), with the latter being in agreement with a low student rating above. Fewer teacher variables, however, received mean ratings above or approaching 4.0; the highest rated variables were characteristics (4.29) and instructional planning (3.96). It is interesting to note that characteristics received the highest mean rating for both students and teachers.

The mean teacher ratings for items were 3.5 or better for 63 out of the 79 items. The five highest teacher rated items were: (a) demonstrate the ability to plan for instruction (4.27), (b) identify characteristics at the various levels of retardation (4.21), (c) define educational definitions and classifications (4.18), (d) identify professional organizations (4.08), and (e) demonstrate ability to implement instructional strategies for

exceptional children (4.07). No item received a mean rating of less than 3.18. The teachers' lowest items were: (a) describe non-traditional ways of teaching algorithms (3.22), (b) discuss conceptual and theoretical approaches to spelling instruction (3.19), (c) counsel individuals to help them make realistic vocational decisions (3.18), and (d) describe specific skills necessary for career entry (3.18).

The distribution of teacher responses revealed 73% rated the students above average (greater than 3.5) on overall competency, while 10% rated their student teachers as below average. Matching the mean data, the high variables were characteristics (84% above 3.5) and instructional planning (80% above 3.5). Composite variables receiving a relatively high percentage of low teacher ratings (3.0 or lower) were research literature (53%), prevalence (48%), legislation (48%), and spelling and writing (44%). Looking at the cooperating teacher responses by item, 80% of the cooperating teachers rated students above average (4s and 5s) for seven of the 79 items; only two items were rated below average (1s and 2s) by 25% or more of the teachers. These latter items were (a) discussing different conceptual and theoretical approaches to spelling instruction and (b) relating career/vocational instruction to children's physical, mental, social, and scholastic level of development.

In summarizing the data pertinent to question one, both students and teachers generally are positive in their evaluations of competence. Relative to the students, the teachers rated fewer variables extremely high, but also had fewer low areas. Comparing distributional data, there was agreement that the variables characteristics and instructional planning were program strengths, while both groups felt students' knowledge of the research literature and spelling and writing could be improved. In terms of specific items, the teachers viewed the students as having at least average competency in all areas, while students felt inadequate in two items (conceptual and theoretical approaches to math and teaching nontraditional algorithms).

2. Are there any significant differences in overall competency ratings between students and teachers?

Mann-Whitney U tests were computed to examine the data (both variables and items) for possible differences between the student and teacher ratings. The mean rank sums and probability levels for the variables were rank ordered by student scores. Inspection of these data reveals little between group variability or systematic trends. In fact, the significance tests indicated that only one variable, math, reached conventional significance ($p < .05$). Similar analyses on the individual items also revealed only one math-related difference.

Students rated their math competency (3.42) lower than their cooperating teachers (3.87) did. More specifically, they had a significantly lower competence rating (2.69 vs 3.55) for the math item, "discuss different conceptual and theoretical approaches to math instruction." While interesting, it should be said that this finding must be considered tentative, given the large number of tests involved. In general, there was little overall group difference between the student and teacher competency ratings.

3. What relationships can be demonstrated by the competency ratings?

a. Is there a relationship and/or agreement between student and teacher competency ratings?

b. Do the cooperating teachers' overall competency ratings relate to student GPA?

In assessing the extent of agreement between student and teacher ratings, two types of correlations could be computed. First, one could examine correlations for each item finding only moderate agreement between the student-teacher ratings of items. Twenty out of 79 items correlated at .40 or above. This would seem to be a moderate level of correlation, given the already mentioned restricted range of the data. There were 13 such item correlations that reached significance, supporting the notion that a positive relationship between student-teacher ratings exists for these items. It also may be noteworthy to look at those items with

little or no agreement between student-teacher competency ratings. Here, students and teachers presumably were responding to different observations or aspects of the competencies. In reviewing these items, a tentative observation might be drawn that the majority of item domains showing agreement involved assessment or possible areas of frequent discussion (e.g., cultural-familial retardation), whereas areas of disagreement pertained either more to teaching, which may be more difficult to evaluate, or likely areas of infrequent dialogue (e.g., prevalence).

The second type of correlation between paired subjects, relates more to individual differences in converging student-teacher pair perceptions. There was significant agreement in six of the 27 cases. It seems that some student-teacher pairs were closer in their perceptions than others. Interestingly, inspection of these students' overall rating by their cooperating teachers did not reveal any clear relationship between agreement and competence.

Given that the cooperating teachers' competency ratings were somewhat distinct from self-evaluations, a final question that might be addressed regarding the cooperating teacher evaluations is whether or not such ratings of student teachers relate to another measure of program performance, student grade point average. The cooperating teachers' overall variable rating of the student teachers was correlated with student grade point average. As

predicted, there was little evidence for a strong relationship with a correlation of .26. Intriguingly, this correlation between teacher ratings and grade point average was somewhat higher ($r = .54$) for those six students for whom there was significant student-cooperating teacher agreement.

In summarizing question three, there was only moderate agreement between students and teachers for selected items, with agreement varying by competency area. Moreover, there were considerable individual differences in the extent of student-teacher rater convergence. Perhaps the extent of nonagreement is not surprising, given the modest range of ratings and presumably important differences between teacher trainees and experienced teachers, each having varying ideas of what a specific competence means. Finally, as expected, the cooperating teachers' overall ratings were largely independent of student grade point average. This is consistent with viewing student teaching as additionally involving more general personal and social skills.

4. Where in the training program did the student teachers perceive each of the competencies were addressed/learned? Which course(s) and/or experiences in the teacher training program were most relevant to the development of the competencies?

In examining the students' written responses to the questionnaires, total frequencies were computed as to the individual sources listed per item. It is not surprising that

course work was the most frequently listed (3,765 times) source of competency development for the student teachers. More specifically, special education courses were mentioned more often than cognate courses (e.g., psychology). Also, within the special education offerings, specific methods courses were most often reported (1,878 times) as sources of competency. After course work, student teaching received the next highest rating (320). Other sources stated to a lesser degree included practical experience (76), the student chapter of CEC (31), and specific readings (10). In addition, students indicated a total of 21 times that they felt a particular competency was not taught within the training program, and 25 times, that they learned a competency on their own. Within this group of responses, 36 items so indicated were in the vocational skills area.

In summary, the vocational variable seemed to have the most disagreement and uncertainty concerning its source. These items had no clear majority source. In addition, there were some items on which low frequency sources would collectively count as the primary source. These are: (a) identify related services, (b) identify state agencies, (c) discuss intelligence testing, (d) assess social skills, (e) describe socialization skills, and (f) discuss approaches to spelling instruction. This would seem to suggest that these items and vocationally-related competencies do not now have a clearly established place within the content of the training program.

5. What is the overall level of student and teacher satisfaction with the training program?

Both teachers and students were asked to indicate their overall degree of satisfaction with the training program on a five-point scale. A five would show strong satisfaction and a rating of one, little or no satisfaction with the program. All of the students indicated at least average satisfaction, with the majority having above average satisfaction. The majority of the teachers similarly were satisfied, with a few more being strongly satisfied (five teachers vs. one student), and only two cooperating teachers rated the program below average.

6. What are the general strengths and weaknesses of the specific preservice program being investigated?

Frequencies were computed for the items students and teachers reported as general program strengths and weaknesses. Most often, the students indicated that the faculty (10) and their actual practical experiences with children (10) were program strengths. Also, the students felt their training in the EMH area was very good (8). Other strengths listed at least five times were student teaching, student CEC, and program flow (i.e., unity and sequence within the program). On the other hand, the most often mentioned weakness was the fact that their training was too categorical, being limited to mental retardation services (22). Other areas of dissatisfaction included the high number of regular education

courses (13), limited practical experience (13), methodological concerns (e.g., technology and computers [9]), and the communication to students of school requirements (8).

Similar data on the cooperative teachers' perceived program strengths and weaknesses were tallied. The teachers' most commonly listed strengths were the faculty (10) and the specific degree of preparation in the EMH area (10). These scores seem to concur with the students', and clearly, speak well of the special education department. Cooperating teachers, however, frequently did cite the following as program weaknesses: methodological concerns (32), narrow focus of exposure to exceptional populations (16), need for more practical experience (13), length of student teaching (10), behavioral management techniques (8), and exposure to diagnostic techniques (7). From this list, it seems that from their practical experience, cooperating teachers have several clear suggestions to make for changes in preparing special education teachers. These should be studied as to their relative importance and be fitted into the present training program goals.

In summary, both students and teachers appear largely satisfied with the training program, especially the faculty and the EMH preparation. They, however, also seem to question the categorical training as a possible program weakness. This seems to be a relevant observation today, as many special classes and settings increasingly are noncategorical. Both groups also had

specific concerns in methodologies (e.g., computers, vocations), and students appear to want more special education courses and experiences.

## Summary

It seems obvious from the data analysis that, generally, the feedback to the training program was positive. The students and their cooperating teachers rated program trainees as competent EMH teachers, given the related state department's criteria. For both groups, the competency strengths appear to be in characteristics and instructional planning. While the program as a whole scored above average, relative program weaknesses were cited in research literature and spelling/writing instruction. The cooperating teachers rated all individual item competencies as being at least average; only two math-related items were below average within the student ratings.

A high degree of satisfaction with the special education training program also was reported. Specific program strengths include the faculty, EMH area preparation, and the practica experience obtained. Areas of perceived weakness were limited to the program's categorical focus and limited training in several specific methodologies. These suggestions may be helpful in reconsidering overall program goals.

Inspection of the reported sources for learning competencies revealed few single sources, with the exception of math methods.

Instead, a strongly perceived core of special education courses overlapped in the teaching of most competencies. Vocational training and a few specific competencies appeared from the reports as having no clear source. These data, along with the frequency distributions of ratings, should provide a focus for departmental discussion in reviewing course goals in the context of the overall curriculum.

The project also raised a number of conceptual issues requiring further research. First, there are numerous methodological questions and concerns in evaluating the behavioral competencies of prospective teachers. In the present study, only moderate test-retest reliability was demonstrated. As in other studies (Popham, 1975) a preponderance of high ratings may have been involved. It might be useful, therefore, to employ a rating scale with either more points or with a more empirical categorization of ratings (e.g., if this skill is evident 90% of the time, rate it with a four). This may allow differences between individual teachers to be more clearly established.

Another concern is how well evaluations of competency can be obtained. Considering this study's difficulty with missing data, it seems that cooperating teachers in particular had trouble interpreting specific items. Perhaps these did not lend themselves to assessment via observation or perhaps they were setting specific. Thus, these concerns may warrant the creation of

evaluation tools specifically geared to a particular training program. In addition, evaluators need to be trained in order to rate the intended specificity of the scale (Meuller, 1976).

It also might be more informative to employ a competency rating instrument at several different points within the training program. Surveying trainees at various times during training (i.e., incoming majors, admission to upper division, senior year, and then at a two-year followup), would provide a more valid means of program evaluation. In so doing, program assessment would approach the multi-faceted level that is suggested in teacher training (Grotelueschen & Lahti, 1978; Popham, 1975).

Such an evaluation also raises the question of how to weight or combine self-competency ratings with other evaluation measures (Maple, 1983; Shores, 1973). As predicted, there was little relationship between competency ratings and student grade point average. It would seem that these measures tap different skills. Yet, the measurement and use of other than academic measures in selecting prospective teachers is underdeveloped.

Another major but related conceptual question addressed in the present study pertained to the extent of agreement between students and cooperating teachers in their competency ratings. Interestingly, there were no overall differences in the average ratings between students and their cooperating teachers, with the exception of an individual math competency. Based on the reported

findings, it tentatively is suggested that agreement may depend on the extent of interaction around the competency and/or perceived ease of evaluation (i.e., assessment vs. teaching). Clearly, further research into this important area is needed and advocated.

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